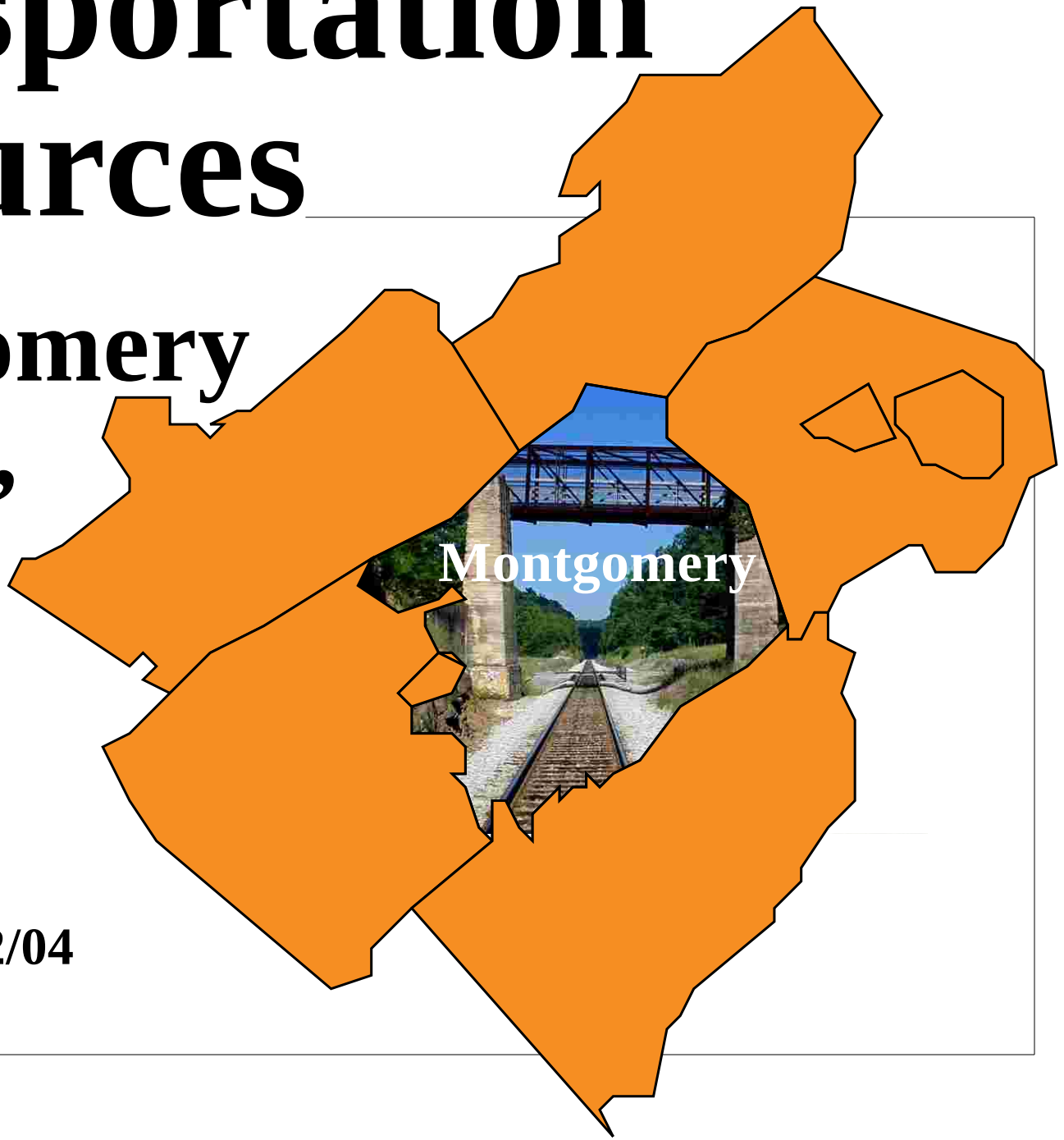
Transportation Resources

Montgomery County, 2025



Adopted: 10/12/04

Transportation Resources: Executive Summary

Photos by Bill Edmonds

The transportation component of Montgomery County, 2025 focuses on four primary goals: 1) Land Use and Transportation, 2) Highway Systems, 3) Mass Transit, and 4) Alternative Transportation. Additional transportation goals and objectives are include in the other sections of Montgomery County, 2025, most notably in connection with the following areas of interest:

Neighborhood Designs (Government and Planning)
Corridor Planning (Government and Planning, Cultural Resources, Economic Development)
Bikeways, Walkways, and Heritage Trails (Cultural Resources , Parks and Recreation, and Environment)
Traffic Safety (Public Safety)

Transportation Resources: Introduction

COMMUNITY SURVEY RESULTS

Participants were asked to rank four transportation related issues: new roads, existing roads, public transportation, and traffic congestion. Not surprising, existing roads and traffic congestion ranked highest (3.79) of the four transportation related issues. Of special concern, judging from the written comments, was the need to maintain and, in some cases, upgrade the secondary road network in Montgomery County. A number of participants cited specific roads, or portions of roads, as being of some concern, whether it was flood damage on Falling Branch, speed on Riner Road, the blind curves of Pilot Road, or the narrowness of Brush Creek Road and Coal Bank Hollow. For roads in the more urban areas of Montgomery County, participants concerns changed from the condition of road beds to the level of traffic congestion and safety concerns. Many of the participants noted problems with Rt. 114, the Rt 114/U.S. 460 interchange, and, what one participant refer to as the spaghetti mess--the interchanges connected to the new 460 bypass (3A).

Safety concerns ranged from overcrowding of roads, speed limits on rural roads, the lack of law enforcement personnel, and the lack of enforcement of traffic laws, especially in neighborhoods and other residential areas, most notably along Rt. 8.

New roads ranked the lowest of all of the transportation issues, with a mean score of 3.05, in part because of participants reactions to the Smart Road and the ongoing construction of 3A and the interchanges at South Main Street and North Franklin. Participants comments concerning the two roadways indicated dissatisfaction on the part of respondents towards the two road projects. One participant went so far as to suggest that Montgomery County create a board game, based on the 3A interchanges, and market it to raise money to fund re-engineering in the future.

The future of the Route 8, Route 114, and Route 11/460 corridors were among the concerns expressed by participants in the 2003 Community Survey. In addition to wanting to see better corridor planning, respondents stressed the need for maintaining and upgrading existing roads, broadening public transit opportunities, and expanding the existing bikeway, walkway, and Heritage Trail system. Perhaps not surprisingly, given the construction of the new bypass and the Smart Road, respondents voiced limited support for new road construction (41% rated new roads as either important or very important).

Public transportation, which received a mean score of 3.62, was cited as one of the primary means of reducing traffic congestion and the need for new roads. One participant wrote:

> "Work on regional cooperation to provide more extensive public transportation such as bus and passenger railroad service to ease traffic congestion. Also buses could use new technology to be less polluting."

Photo by Bill Edmonds

Another noted that the county should “Expand public transportation to relieve congestion decrease pollution & allow more funds for maintenance of existing roads.” A number of the participants noted specific changes to the current public transportation offerings, including expanding or changing bus routes, Still others felt that the modes of public transportation should be expanded, including building more bikeways and trails and adding a light rail system in the more populated areas.

Finally, in their written responses to the question, "What would you like to see in Montgomery County in 2025?," respondents suggested they wanted a county with an adequate public transportation system, access to intermodal transportation options (rail, bikeways, walkways, etc.), safer traffic control and conditions, and better overall transportation planning (including active participation in the Metropolitan Planning Organization).

Transportation Resource Issues: Community Survey Mean Results, 2003

Transportation Resource Issues	Mean Score
Existing Roads	3.79
Traffic Congestion	3.79
Public Transportation	3.62
New Roads	3.05

Note: Forty-one issues were included in the “rate this issue in terms of importance” portion of the community survey. A mean score was calculated for each of the 41 issues, as well as for the total of all issues. Issues with scores higher than 3.65 (the mean for all issues) indicate that the majority of respondents rated the issue greater importance; a score lower than 3.65 indicates that the majority of respondents rated the issue of less importance than the on average. The scale for the survey was: 0=no response; 1= not important; 2=minimally important; 3=moderately important; 4=important; and 5=very important. Source: 2003 Community Survey, Montgomery County, Virginia.

CURRENT AND HISTORICAL TRENDS AND CONDITIONS

In the past fifty years, Montgomery County residents have seen the county shift from relatively isolation, connected to the rest of the country by the parallel rails of the Norfolk & Western and the Virginian Railroads and the two lanes each of US 460 and US 11, to a county crossed by the mainline of the Norfolk-Southern Railroad; by Interstate 81 (a heavily traveled, four- to six-lane, north-south interstate, linking Montgomery County to both the upper East Coast and to the upper South and the Southwest); and an expanded US 460 (providing direct access to I-77 and the upper Midwest).

As the transportation facilities changed and expanded, so too did the economic conditions and character of Montgomery County. In 1950, the economy was based on agriculture, education, and manufacturing. The construction of I-81, in the 1960s and 1970s, brought Roanoke and the rest of Virginia closer, at least psychologically, by significantly decreasing the driving time required to reach Woodrum Field (Roanoke Regional Airport) and the eastern and northern portions of Virginia, including Richmond. In the 1960s and 1970s, the Virginia Department of Transportation (VDoT) added two additional lanes to US 460 through Giles County to what would become the West Virginia Turnpike (subsequently I-77), and I-81 was extended further south and west. The changes in I-81 and US 460 both effectively decreased the isolation of Montgomery County and the outlying areas, while increasing Montgomery County's viability as a regional center. By the early 1970s, Montgomery County's economy was being defined by the rapid growth of Virginia Tech and nearly 20 years of industrial expansion (including Electro Tec, Poly-Scientific, and Corning). By the 1980s, growth in the retail and commercial sectors not only transformed the economic landscape, but also forever changed the physical landscape in the mid-county area. The development of the New River Valley Mall

in the late-1970s signaled a significant shift in the regional economic patterns--a shift made possible, in large part, by changes in the highway transportation system.

Today, Montgomery County is the regional employment, education, retail, and service center for the New River Valley, a fact underscored by the U.S. Census Bureau's recent designation of Montgomery County and Radford (as well as Giles and Pulaski Counties) as a Metropolitan Statistical Area (MSA) and the 2003 formation of the federally mandated Metropolitan Planning Organization (MPO), an organization charged with transportation planning in the urbanized portion of the county, including Blacksburg and Christiansburg.

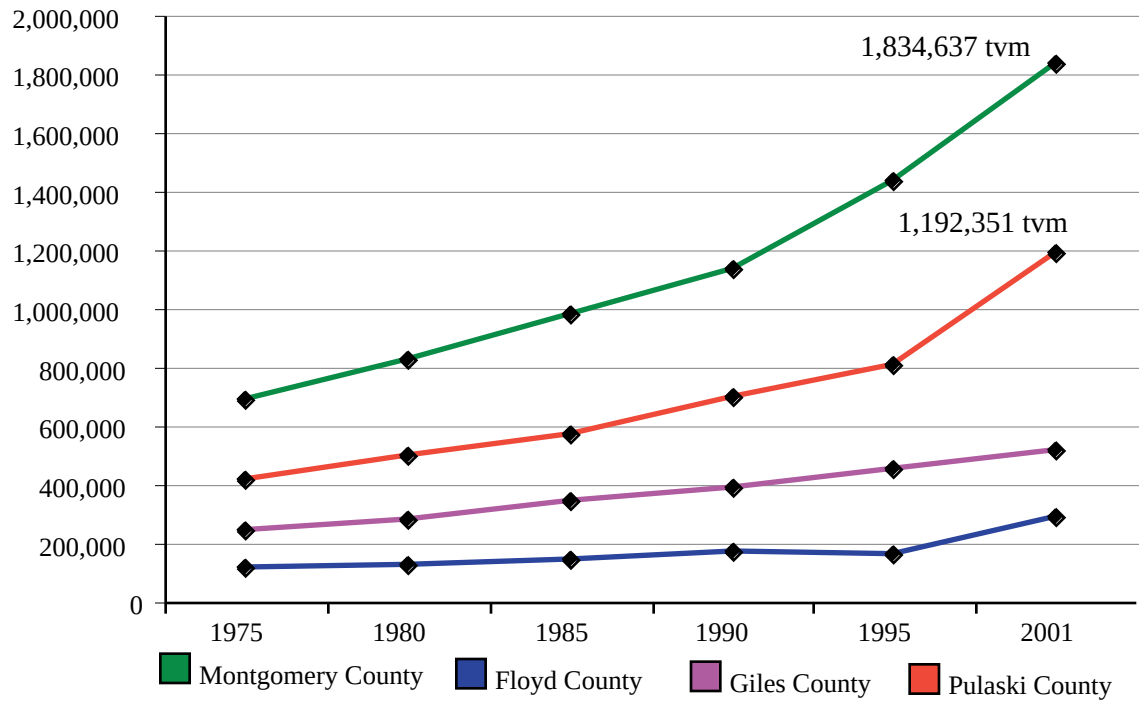
Cohesive planning, both in terms of transportation and land use, is and will be necessary to address the issues created by an expanding population and by expanding needs both in and outside of Montgomery County. As with the changes created by the expansion of highway systems in the past, new expansions are likely to spawn changes in development patterns and increase development pressures in areas of Montgomery County which have been, heretofore, left reasonably untouched. This is especially true along the I-81, Mudpike, and US 11 corridors between Christiansburg and Radford; the US 460/11 and I-81 corridors through Elliston/Lafayette, Ironto, and Shawsville; and the Route 8 corridor through Riner area and the southwestern portions of Montgomery County. The latter of these three corridors creates the greatest amount of concern because the development pressure will, most likely, originate outside of Montgomery County. As Floyd County develops, there is likely to be increased pressure to provide that county with a more direct, higher speed link to I-81 and the employment, educational, cultural, and commercial opportunities offered in the urbanized center of Montgomery County.

Montgomery County Road Network, 2003

Road Classification	Number of Miles	Percentage of Road Miles
Interstate	20.94 miles	4.00%
Other Principal Arterials	7.17 miles	1.37%
Minor Arterials	21.98 miles	4.20%
Major Collectors	111.91 miles	21.37%
Minor Collectors	12.93 miles	2.47%
Local Roads	348.70 miles	66.59%

Virginia Department of Transportation, 2003

Total Vehicle Miles Per 24 Hours: Interstate, Arterial, and Primary Roads, 1975-2001



Note: Between 1975 and 2001, there was a 266% increase in the total vehicle miles per 24 hours in Montgomery County. Of the 1,834,637 miles logged per day, in 2001, 800,346 (or 44%) were on the County's arterial and primary routes; the remaining 1,034,291 miles, per day, were on I-81. Prior to 1995, more vehicle miles were logged per day on the primary and arterial routes than on I-81. This has changed in the past seven years. The difference in the Interstate Total Vehicle Miles between Montgomery and Pulaski Counties can be accounted for by traffic from Virginia Tech and from vehicles using US460 as a connection between I-77 and I-81.

	1975	1980	1985	1990	1995	2001
Montgomery County	689,580	823,708	980,671	1,135,443	1,438,176	1,834,637
Floyd County	114,229	126,357	146,100	172,980	164,637	289,771
Giles County	249,576	281,390	346,614	389,491	457,242	516,263
Pulaski County	421,721	501,121	574,678	695,626	806,106	1,192,351

Source: Virginia Department of Transportation, 2004

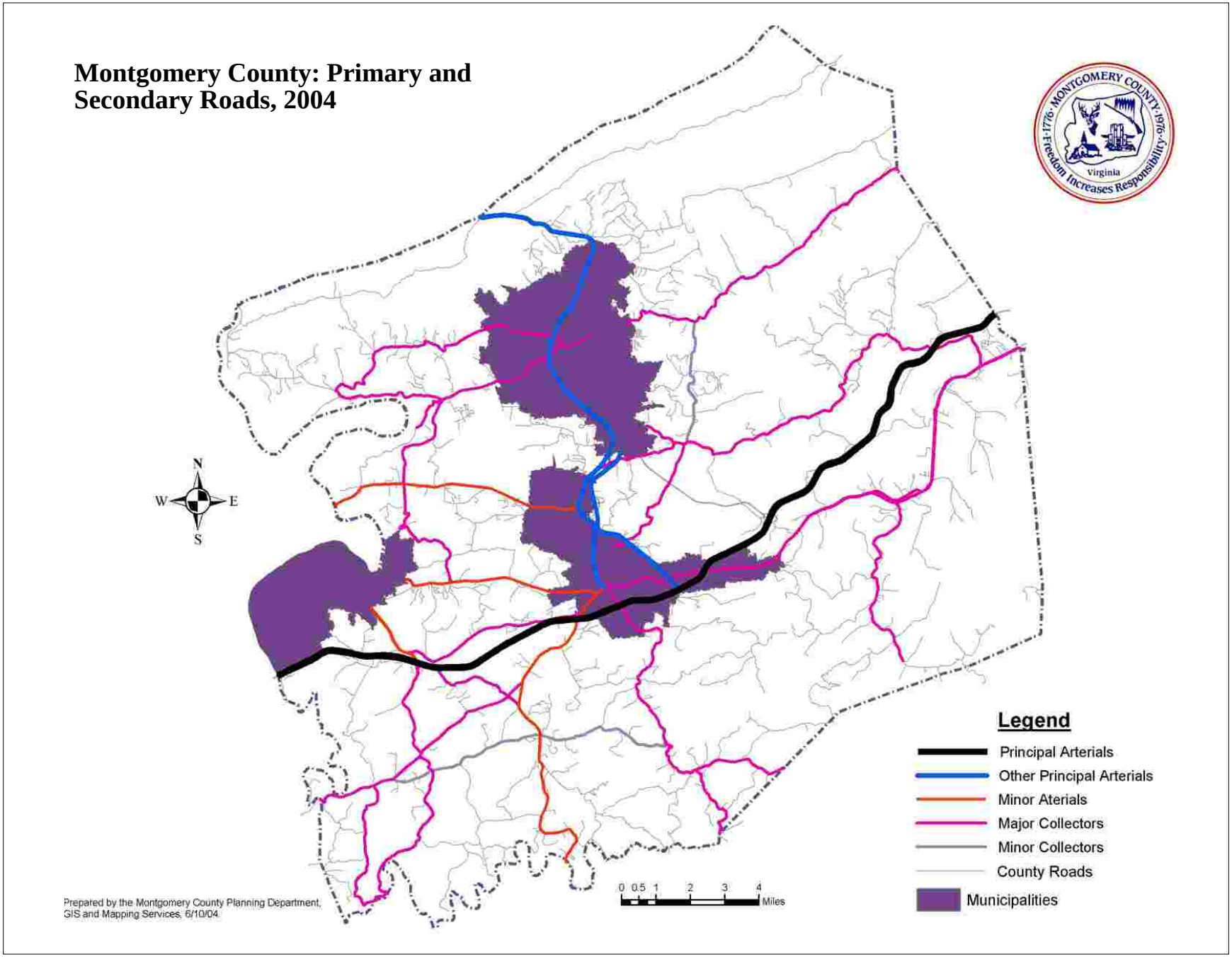
Metropolitan Planning Organization (MPO):

A new Metropolitan Planning Organization (MPO) consisting of Blacksburg, Christiansburg and urbanizing portions of Montgomery County was required by the Federal Highway Administration after the 2000 Census found the Blacksburg / Christiansburg area had an urbanized population greater than 50,000. The MPO is required to develop and maintain a comprehensive transportation plan and process for this area and receives federal funding to carry out these planning functions. A Memorandum of Understanding (MOU) was executed in 2003 between Blacksburg, Christiansburg, Montgomery County, and VDoT to establish the MPO. This memorandum provides for a Technical Committee for general review, guidance, and coordination of the continuing planning process and a Policy Board with representatives from elected boards to assure coordination between the several elected boards and the MPO operations.

Primary and Secondary Highway System:

Montgomery County has six primary categories of roads: 1) Interstate 81; 2) principal arterials, including US 460; 3) minor arterials, including Rts 8, 11, 114, 177, and the northern portion of US 460; 4) major collectors, including US 460/11 between Roanoke County and Christiansburg, Rts 8, 11, and 114, and a number of secondary roads (e.g. Prices Fork Road); 5) minor collectors, including Rts 693 and 603S; and local roads.

Since 1975, Montgomery County has witnessed a dramatic increase in the amount of traffic on the county's road system. The total vehicle miles, per 24 hour period, has increased 266% (1975-2001) and the traffic


Montgomery County: Primary and Secondary Roads, 2004
MONTGOMERY COUNTY · 1776 · 1976 · Freedom Increases Responsibility · Virginia
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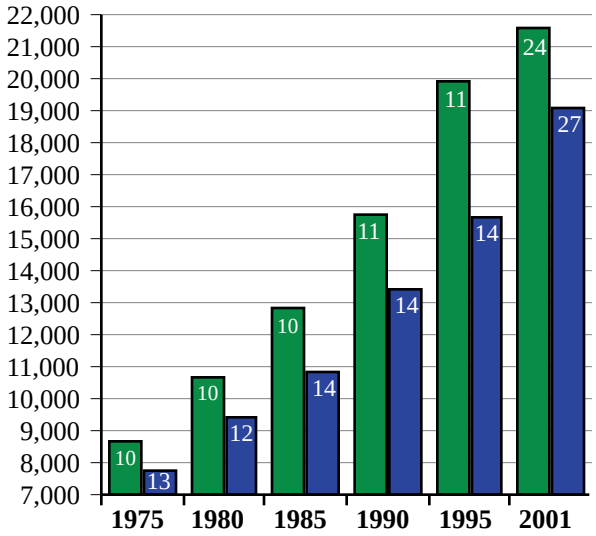
Prepared by the Montgomery County Planning Department, GIS and Mapping Services, 6/10/04

density, defined as the average traffic per mile of road during a 24 hour period, has increased 248% in the same period of time.

Until very recently, Montgomery County ranked either 10th or 11th in Virginia in the average density per mile. In the past seven years, however, the traffic in areas on or near I-95 has increased and Montgomery County's statewide ranking dropped to 24th in 2001.

In October, 2003, the Board of Supervisors specified a list of secondary road projects for the Virginia Department of Transportation's (VDoT) Six-Year Improvement Program list, including projects on Yellow Sulphur Road, Craig Creek Road, Thomas Lane, and many others.,. In addition, VDoT has provided some funding for primary road projects, including slating work for I-81, Rt 114, US 460, IVHS (Intelligent Vehicle Highway System), and the Smart Road.



Montgomery & Pulaski Counties: Average Traffic, Per Mile of Road, in 24 hours, 1975-2001

State ranking for county is included on each bar.

Source: Virginia Department of Transportation, 2004

	1975	1980	1985	1990	1995	2001
Montgomery County	8,700	10,644	12,846	15,789	19,922	21,623
Pulaski County	7,782	9,447	10,834	13,442	15,698	19,109

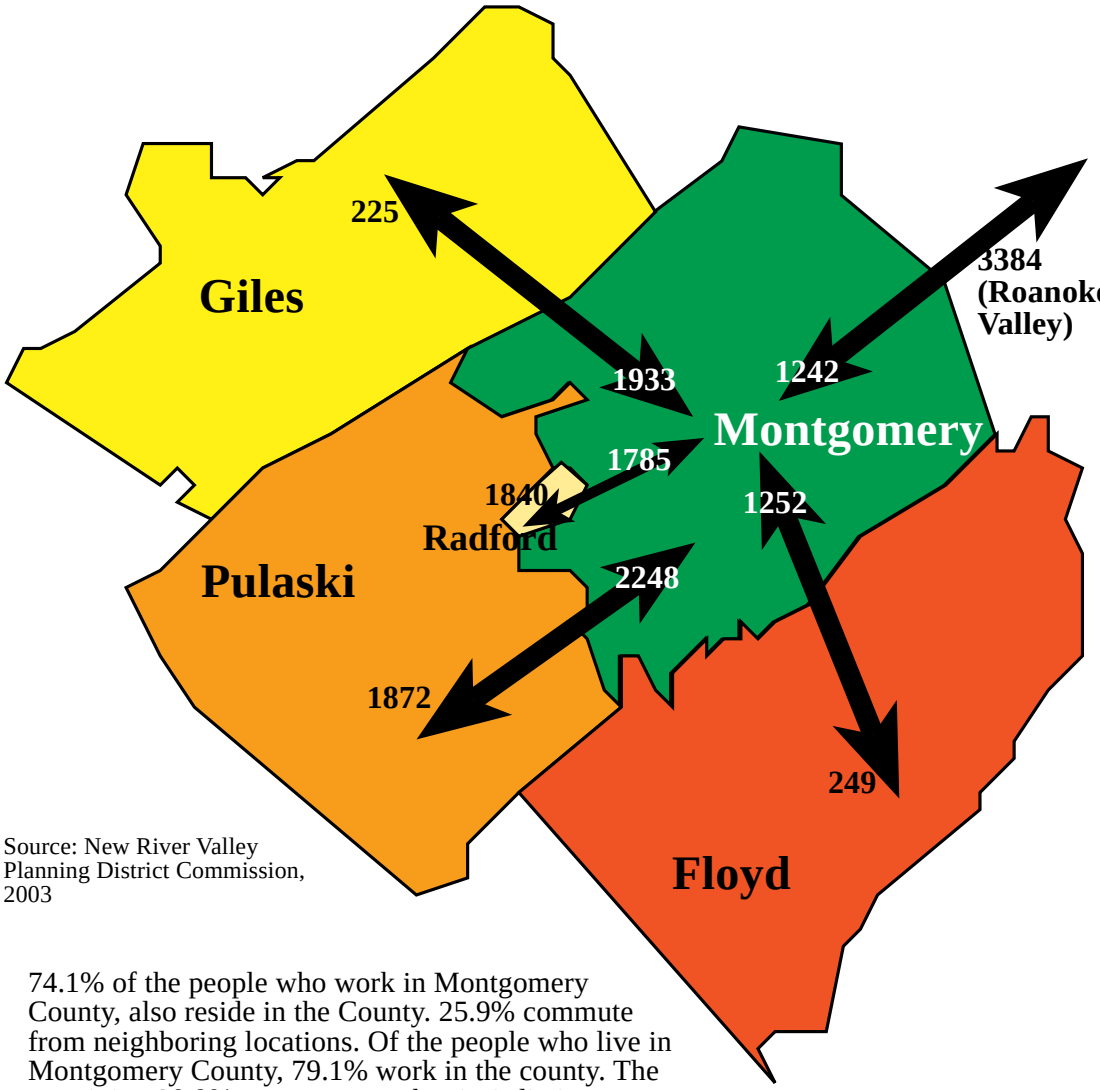
Commuting Patterns.

There are a number of ways to look at work-related commuting: 1) as incommuting (the number of people who commute to Montgomery County for work); 2) as outcommuting (the number of people who commute from Montgomery to other locales for work; and 3) as commuting time (the average time required to commute to work). While the majority of Montgomery County residents (79.1% or 29,589) both live and work in the county, slightly more than a fifth (20.9%) commute to other jurisdictions to work (outcommuting), including 5% to Pulaski County, 4.9% to Radford, and 9.1% to the Roanoke Valley. The same trends hold true for those who work in Montgomery County. Better than a quarter of the Montgomery County workforce (25.9%) commutes from other jurisdictions, including 5.6% from Pulaski County, 4.8% from Giles County, 4.5% from the City of Radford, 3.1% from Floyd County, and 3% from the Roanoke Valley. The ratio of incommuters to outcommuters approximately 5 to 4 (1.18:1). Despite the number of residents who work outside of Montgomery County, the majority of residents spend less than a half an hour commuting to work (79%) and 42% spend less than 15 minutes. The relatively short commute times is, in large part, due to the concentration of population (residences) and economic enterprises in Blacksburg and Christiansburg.

Photo by Bill Edmonds

Mass and Alternative Transportation:

Mass transit has the potential to produce substantial mobility for all and provide environmental benefits by attracting large numbers of individual trips that otherwise would be made by private automobile. Mass transit can provide support to communities, the economy, and the environment by decreasing auto-related transportation on existing highway network and connecting people with alternative modes of transportation. It would be ideal to transport a large number of people to their



74.1% of the people who work in Montgomery County, also reside in the County. 25.9% commute from neighboring locations. Of the people who live in Montgomery County, 79.1% work in the county. The remaining 20.9% commute to other jurisdictions, including the Roanoke Valley and Pulaski.

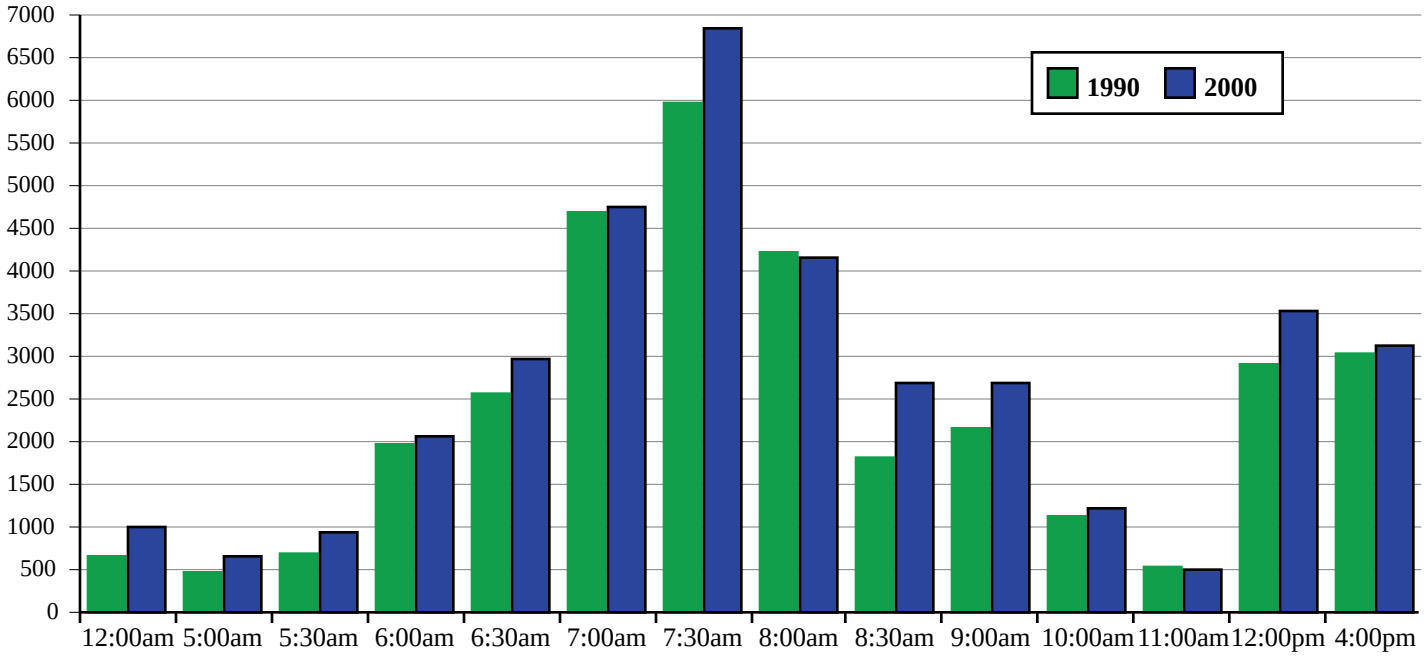
desired destination without them ever having to set foot in a private automobile, which could be achieved by providing connectivity to various existing network modes.

While alternative and mass modes of transportation have long existed in Montgomery County, their scope and range of network have generally been both limited and isolated. Longtime residents of Merrimac, a small mining community between Blacksburg and Christiansburg, can still remember riding the Huckleberry rail line into the two towns. Residents of Elliston, in the eastern portion of the county, still speak of catching the train into Roanoke. Although there is a significant move afoot to bring rail transportation back to Montgomery County, evidenced by the New River Valley Regional Rail Corridor Plan, Phase II (1997) and the Trans Dominion Express initiative, current mass transportation in Montgomery County is limited to the services provided by Blacksburg Transit, including the Two-Town Trolley, which runs between Blacksburg and Christiansburg. A pending proposal form the Greater Roanoke Transit Company (Valley Metro) would provide bus service between Blacksburg, Christiansburg, Montgomery County, and the Roanoke Valley.

Bikeway, Walkway, Trail System

Alternative transportation refers to the provision of a system of bikeways, walkways, and heritage trails in Montgomery County. The current system of trails and other pedestrian and bicycle friendly transportation routes was established in the 1990 Montgomery County Bikeway/Walkway Plan, which described a system of shared roads (roads with lighter traffic counts), bike lanes adjacent to roads with higher traffic counts, and paved, ADA compliant trails. In the years since the passage of the 1990 plan, bike lanes have been added along Rt 723 between Lusters Gate and Ellett and along Rt 685 between Blacksburg and Prices Fork. In addition, Montgomery County, Blacksburg, and

Montgomery County Commuters: Time They Leave For Work, 1990-2000



	12:00am	5:00am	5:30am	6:00am	6:30am	7:00am	7:30am	8:00am	8:30am	9:00am	10:00am	11:00am	12:00pm	4:00pm
1990	657	472	700	1973	2561	4686	5972	4215	1816	2170	1132	518	2898	3043
2000	985	667	937	2072	2977	4756	6856	4141	2694	2689	1220	514	3533	3138

Regional Commuting Patterns, 2001

	Number (%) Working & Living in Same County	Number (%) Outcommuting	Number (%) of Outcommuters to Montgomery County	Number Incommuting	Number (%) of Incommuters Commuting from Montgomery County
Montgomery County	29,589 (77%)	8,741 (33%)	n/a	10,319	n/a
Floyd County	2,824 (43%)	3,746 (57%)	1,252 (33%)	640	249 (39%)
Giles County	3,914 (54%)	3,381 (46%)	1,933 (57%)	2,148	225 (11%)
Pulaski County	16,183 (65%)	5,592 (35%)	2,248 (40%)	6,443	1,872 (29%)
Radford (City)	3,651 (52%)	3,317 (48%)	1,785 (54%)	5,128	1,840 (36%)
Roanoke County	14,425 (33%)	28,994 (67%)	534 (02%)	20,247	1,036 (05%)
Roanoke City	27,069 (62%)	16,625 (38%)	492 (03%)	42,478	1,199 (2.8%)

Source: New River Valley Planning District Commission, 2003

Christiansburg worked the Friends of the Huckleberry to build the Huckleberry Trail, a rails-to-trails project, which extends from the Blacksburg branch of the Montgomery/Floyd Regional Library in downtown Blacksburg, through Merrimac, to the New River Valley Mall in Christiansburg. Plans to extend the Huckleberry south into Christiansburg and north to the Jefferson National forest are under development.

Air and Rail Transportation.

Virginia Tech / Montgomery Executive Airport:

This airport, located beside the Virginia Tech campus, currently houses approximately 35 aircraft on site, and serves 39,000 flights annually. The airport sits on 280 acres and uses a non-precision localizer approach. A primary runway of 4,550 feet in length accommodates corporate and private jets. The runway is also lighted for night flight operations and is complemented by instrument approach facilities. A parallel taxiway is currently provided as well as a newly constructed terminal building, parking area, hangar space, and apron area. The Virginia Tech / Montgomery Regional Airport Authority was formed in 2001 by Blacksburg, Montgomery County and Virginia Tech to administer the airport under a long-term lease from Virginia Tech.

New River Valley Airport:

This facility, adjoining the New River Valley Commerce Park, has an ample supply of available and affordable land for expansion and installation of shipping terminals. The NRV airport has one of the longest runways in the western portion of Virginia with a 6,201' x 150' asphalt runway. There is open space around the facility for both fixed facility improvements and runway improvements. This airport is well positioned to serve all domestic and foreign markets. It is the Montgomery County's closest inland port authority. Montgomery County is a member of the New River Valley Airport Authority

Roanoke Regional Airport:

This facility provides full-service passenger and freight air service and is the primary airport serving southwestern Virginia. The airport has approximately 90 scheduled passenger flight arrivals and departures per day, accessing twelve major cities with nonstop service. A five-member commission that includes representatives of the City of Roanoke and Roanoke County governs the airports operations. The airport has made major improvements in recent years to ensure its competitiveness, such as a new terminal and runway extension. A new tower is planned along with other improvements. Project Nexus is a regional project to increase the airports competitiveness by promoting low-fare, daily express service between Roanoke Regional Airport and Dulles International Airport.

Transportation Resources: Goals

TRN 1.0 Land Use and Transportation Goal: Coordinate land use planning with transportation planning in order to reduce traffic congestion and to balance development needs with the desire for livable communities. (1)

TRN 1.1 Public Information and Outreach: Actively promote public participation in the transportation planning and decision-making processes and public use of transportation opportunities in Montgomery County by: 1) providing for public input opportunities; 2) maintaining and publicly distributing transportation-related GIS data in order to track changes in land use and transportation opportunities; and 3) providing access to a broad range of transportation related information to increase public understanding and awareness and promote public use of the transportation modes offered in Montgomery County. (2)

TRN 1.1.1 Transportation Related Public Involvement: Increase public involvement in transportation-related decisions, including: 1) work with the MPO and other local jurisdictions to develop a policy to encourage significant public input and involvement in transportation and corridor planning; and 2) work with local organizations to encourage significant public input and involvement in local corridor and village planning initiatives. (3)

TRN 1.1.2 Transportation Map (GIS) and Public Information: Provide an annually updated Montgomery County Transportation Map, legibly labeled, which would include all road names, route numbers, walkway/bikeway routes, public transit stops, park and ride lots, airports, and other transportation information generated by Montgomery County and the Metropolitan Planning Organization (MPO). (4)

TRN 1.1.3 Transportation Related Public Information: Provide broad-based public access to print and electronic based transportation-related information, including Montgomery County Transportation Map, annually updated; Montgomery County GIS data and online mapping service; Metropolitan Planning Organization (MPO) data, meeting minutes, and reports; roadway maintenance problems and directions for notifying the Virginia Department of Transportation (VDoT) when maintenance problems arise; Park and Ride facilities and information; and bikeway, walkway, and Heritage Trail information.

TRN 1.2 Metropolitan Planning Organization (MPO): Provide ongoing, long-term support of and assistance to the Metropolitan Planning Organization.

TRN 1.2.1 2030 Long-Range Transportation Plan: Provide input on County land use issues into the MPOs ongoing transportation planning process and the MPOs preparation of the 2030 Long-Range Transportation Plan, which will address: 1) future road improvements for arterial and collector roads, including flexible, context-sensitive road design standards; 2) mass transit; and 3) Heritage Trails, bikeways, and walkways. (5)

Cross References and Notes:
1. Specific transportation land use policies are include in the Planning and Land Use chapter, including Resource Stewardship Areas (PLU 1.2.3 [c][d])(pg. 36); Rural Areas (PLU 1.3.3 [c][d](pg. 37); Rural Communities (PLU 1.4.2 (b) and PLU 1.4.3 [c][d](pg. 39); Residential Transition Areas (PLU 1.5.3 [c])(pg. 40); Village Expansion Areas (PLU 1.6.4 [c][f] and PLU 1.6.5 [c])(pg. 42); Villages (PLU 1.7.4 [d][e] and PLU 1.7.5 [c][d](pg. 44-5); and Urban Expansion Areas, including corridor planning (PLU 1.8.2, PLU 1.8.3 [c], and PLU 1.8.5 [c](pg. 45-46). Additional provisions for Road Access (PLU 2.1 [c]), Interparcel Access [PLU 2.1 [e]) and Pedestrian Access (PLU 2.1[f]) (pg. 48) are included under the land use policies for new development. Street considerations are included in the traditional neighborhood design (PLU 3.0 [b-i-vii, pg. 50). Safe Neighborhoods are addressed in HSG 1.3.3: Safe Neighborhoods and Transportation (pg. 190).
2. The provision of public information is one of the central themes of *Montgomery County, 2025*. Additional information on the plan's approach to public information is included in PNG 2.2: Informing the Public (pg. 67).
3. Corridor planning is addressed in PLU 1.8.2: Corridor Planning (pg. 45).

Cross References and Notes:
4. The County's Geographic Information System (GIS) provides both County staff and County residents with a powerful analytic tool. Additional information on the GIS system is included in Cultural Resources (CRS 1.2.2, pg. 81), Environmental Resources (ENV 1.3, pg. 136), Public Safety (SFY 1.1.5, pg. 197), and Utilities (UTL 1.4.3, pg. 235).
5. The Heritage Trail system, bikeways, and walkways are addressed in TRN 4.2 Walkway/Bikeway Update (pg. 224); CRS 1.1.3: Heritage Parks and Trails System (pg. 81); HSG 1.3.3: Safe Neighborhoods and Transportation (pg. 190); PRC 1.3.2: Trail Linkages (pg. 206); and PRC2.3: Trails (pg. 207).

TRN 1.2.2 Cooperative Review: Develop a cooperative review policy/ agreement whereby Montgomery County would include the MPO, along with other local
jurisdictions, and vise versa in addressing transportation issues for new, major developments.

TRN 1.3 Subdivisions: Proactively review, on a regular basis, the Subdivision Ordinance with respect to those issues that involve both land use and transportation. By regularly reviewing the subdivision ordinance, the county can establish proactive policies which address land use and transportation issues, including cul-de-sacs, street continuation and connectivity, and right-of-way standards. (6)

TRN 1.3.1 Cul-de-sac: Review the Subdivision Ordinance requirement limiting the number of lots permitted on a dead end cul-de-sac rather than limiting the linear feet of the cul-de-sac.

TRN 1.3.2 Street Continuation and Connectivity: Require that the arrangement of streets in new subdivisions: 1) make provisions for connectivity and for the continuation of existing streets into adjoining areas; and 2) delineate future street extensions on subdivision plats in order that lot purchasers are aware that the streets in their subdivisions are likely to be extended to adjoining properties. (7)

TRN 1.3.3 Right-of-Way Standards: Require new lots, created by subdivision, abut streets meeting VDoT right-of-way standards. This requirement leads to the dedication of additional right-of-way when lots are platted along existing streets with substandard right-of-way widths. Exceptions are made for family subdivisions and lots with private access easements.

TRN 1.3.4 Context Sensitive Street Designs. Work with VDoT to develop road standards which allow for context sensitive street designs in Villages and urbanized areas. (8)

TRN 1.3.5 Pedestrian Oriented Facilities. Require the provision of pedestrian facilities (sidewalks, walkways, trails, etc.) in new developments in the Village, Village Expansion, Residential Transition, and Urban Expansion Areas. (9)

TRN 1.4 Connectivity and Access Management: Provide for the safe, orderly, and efficient flow of traffic along roads classified as major and minor arterials by 1) incorporating access management strategies in the review of development proposals; and 2) asking the Metropolitan Planning Organization (MPO) to assist in evaluating ingress, egress, and connectivity requirements. This requirement would limit the burdening of any one road with only one ingress and egress and encourage connectivity. Presently such a requirement exists only for the 177 Corridor Planning Area.

TRN 1.4.1 Strip Development: Discourage strip development, particularly of commercial properties, along important transportation corridors by designating areas that can be zoned to serve as compact centers for development, including village and urban centers and major road intersections.

TRN 1.4.2 Commercial Access: Require that high volume/ high turnover commercial establishments (drive-thru restaurants and convenience stores for example) locate within other commercial development where access to the facility is from the development, not from the major thoroughfare.

Cross References and Notes:
6.See footnote #1 (pg. 219).
7. Street continuation and connectivity are central themes in the County's approach to transportation planning. Additional references can be found in the Planning and Land Use chapter (see note #1 for specific references); and HSG 1.3.3 Safe Neighborhoods and Transportation (pg. 190), as well as other portions of this chapter.

Cross References and Notes:
8. The need for a flexible, contextual approach to road standards is especially important in the Villages and Rural Communities where historic patterns of development differ from existing state road standards and where the historic fabric of the community could be disrupted or destroyed if current standards were strictly applied. Additional information on transportation issues and contextual road standards as they apply to rural communities and villages can be found in PLU 1.4.2[b], 1.4.3 [c][d], 1.7.4[d][e], and 1.7./5 [c][d] (pgs 39, 44-45). In addition, street sensitive design is also addressed in the Proposed Revision Virginia Department of Transportation Subdivision Street Requirements (published in the Virginia Register on May 3, 2004) and Draft Virginia Department of Transportation Subdivision Street Design Guide (Appendix B of the Road Design Manual) dated 12/19/2003
9. Pedestrian-oriented development is addressed in PLU 1.6 Village Expansion Areas (pg. 41), PLU 1.7: Villages (pg. 43), and PLU 3.0 Community Design (pg. 50).

TRN 1.4.3 Shared Access: Encourage shared access for roads classified as major and minor arterials and major and minor collectors.

TRN 1.5 Road Standards: Encourage flexibility in the application of road design standards. The application of any standards should consider a roads context and setting and the impact of the proposed design upon the community and the environment.

TRN 1.6 Cash Proffers: Evaluate the development a Cash Proffer System, in partnership with Blacksburg and Christiansburg, to address the impact of new development on the transportation system and provide funding to alleviate future problems. (10)

TRN 1.7 Comprehensive Plan Compliance. Actively review all transportation and land use projects and proposals to determine compliance with the applicable sections of the comprehensive plan and land use policies.

Cross References and Notes:
10. Proffers are addressed, more fully, in PLU 2.2: Proffer Guidelines (pg. 48).

TRN 2.0 Highway System: Manage, enhance, and maintain the current network of transportation in order to maximize safety and efficiency and facilitate economic development, while reducing natural and built environmental impacts.

TRN 2.1 Maintenance: Encourage the Virginia Department of Transportation and Montgomery County to approach efficient and effective maintenance of existing public roads as a first priority, in order to extend roadway surface life, minimize traffic congestion, and increase public safety during all seasons and under all weather conditions. It is important to maintain current transportation routes as the most cost effective alternative to building new roads. Maintenance of our roads will provide a safe travel surface, eliminate hazards to pedestrian and vehicular traffic, and protect the financial investment in the roadway system by preventing progressive deterioration of the pavement and shoulders.

TRN 2.2 Safety: Encourage law enforcement to enforce speed limits, stoplights, and all other traffic laws in order to effectively protect: 1) the public health, safety, and welfare; 2) residents' quality of life; and 3) the fluidity and efficiency of both our vehicular and our pedestrian transportation systems. (11)

TRN 2.2.1 Law Enforcement Personnel: Encourage local and regional jurisdictions to increase the number of law enforcement personnel, in order to more effectively enforce the law and provide a higher quality of life and a safer atmosphere to the Montgomery County citizens.

TRN 2.3 Alleviating Traffic Congestion and Accidents. Identify congestion and accident prone routes and intersections and adopt policies to alleviate congestion, increase safety, and decrease car trips.

TRN 2.3.1 Problem Intersections and Routes: Identify problematic intersections and routes in Montgomery County, and work with the Metropolitan Planning Organizations and The Transportation Safety Commission to find solutions.

Cross References and Notes:
11. Public Safety considerations are also addressed in SFY 1.0: Public Safety (pg. 197). In addition, public safety considerations are central to the design of safe neighborhoods, addressed in HSG 1.3: Safe Neighborhoods (pg. 190).

TRN 2.3.2 Park-and-Ride: Work with the MPO to develop a regional park-and-ride lot strategic plan which would : 1) provide facilities in outlying areas of Montgomery County and adjacent jurisdictions; 2) evaluate existing, under utilized parking lots for park and ride opportunities; and 3) establish a public awareness program to encourage increased usage of park-and-ride facilities.

TRN 2.4 Access Management: Encourage the practice of access management both in Montgomery County and regionally, which will deter expensive road improvements, allow safer driving conditions while decreasing traffic congestion, and increase safety for pedestrians and cyclists.

TRN 2.4.1 Corridor Planning and Access Management: In cooperation with the New River Valley Planning District Commission, develop a regional approach to the corridor planning process (e.g. The 177 Corridor Plan) which incorporates access management techniques, (12)

TRN 2.5 Interstate 81 Corridor Improvements: Support the multi-year Environmental Process currently being conducted by the Virginia Department of Transportation and the corridor improvements identified in the 1998 Virginia Department of Transportation (VDoT) study to meet the future needs county residents and those passing through the county on Interstate 81. (13) Any proposal for improvements to the Interstate 81 corridor must address the following eight issues of significance to Montgomery County:

TRN 2.5.1 Smart Road: The future Smart Road interchange should be evaluated and incorporated into the design and construction of any improvements.

Cross References and Notes:
12. Corridor planning is also addressed in PLU 1.8.2: Corridor Planning (pg. 45). Additional considerations are also included in PLU 3.0: Community Design (pg.50)
13. Montgomery County is concerned (Board resolution of October 27, 2003) with the two private proposals (Fluor and Star Solutions) for improvements to the Interstate 81 corridor submitted under the Public Private Transportation Act of 1995 (PPTA). The two proposals are vastly different from each other and neither proposal corresponds to the concept study for Interstate 81 corridor improvements developed for VDoT in 1998. Moreover VDoT is beginning a multi-year Environmental Process to determine the purpose, need, and scope of corridor improvements. Therefore, any proposal decision should not be made until the Environmental Process is complete.

TRN 2.5.2 Scenic Beauty: Encourage green medians and discourage soundwalls in order to maintain scenic beauty throughout the corridor. (14)

TRN 2.5.3 Rail Alternatives: Require a detailed study and serious consideration of passenger (Trans Dominion) and freight rail service alone the entire Interstate 81 corridor, including possible improvements in adjacent states. (15)

TRN 2.5.4 Toll Free Local Traffic: Structure toll policies to exempt local traffic: 1) within the Blacksburg MSA (Blacksburg, Christiansburg, and Radford) and 2) between the adjoining Blacksburg MSA and the Roanoke MSA.

TRN 2.5.5 Toll Facility: Location Locate toll facilities where they will not have an adverse impact on local highways. For example, the Fluor proposal locates a toll facility at mile marker 116 thereby dumping significant traffic onto the local streets of Christiansburg.

TRN 2.5.6 Stormwater Management: Encourage VDoT to work with appropriate local governments in the design and construction of regional stormwater management facilities along the corridor. (16)

TRN 2.5.7 Agricultural & Forestal Districts (AFDs): Discourage expansion of right-of-ways beyond what was identified in VDoT's 1998 concept study in order to minimize the impact on Agricultural and Forestal Districts (AFDs) in Montgomery County. (17)

Cross References and Notes:
14. Scenic beauty, in the form of viewsheds, is a significant advertising resource for Montgomery County. The I-81 corridor functions as both an introduction to and an invitation to travellers to stop and explore the County. The preservation of access to viewsheds and the scenic beauty the County has to offer is address in CRS 1.1: Historic Villages, Districts, and Corridors (pg. 81); CRS 1.3: Historic Preservation and Tourism (pg. 82); ENV1.0: Open Space (pg. 136); and ENV 2.3: Viewsheds (pg. 137).
15. Rail transportation is covered in TRN 5.0: Multi-Modal Transportation (pg. 225)
16. Stormwater Management is also addressed in UTL 4.0: Stormwater Management (pg. 237); ENV 6.5: Stormwater Management (pg. 147); and ENV 7.0: Stormwater and Erosion Control (pg. 148).
17. Agricultural and Forestal districts are addressed in ENV 2.1.3: Agricultural and Forestal Districts (pg. 139) and ENV 3.1.6: Agricultural and Forestal Districts (pg. 139).

TRN 2.5.8 Rest Areas: Encourage the construction of adequate rest areas, which provide separate facilities for cars and trucks, through out the corridor.

TRN 2.6 Virginia Scenic Byways: Virginia Byways are existing roads with significant aesthetic and cultural values, leading to or lying within an area of historical, natural or recreational significance. Montgomery County, in conjunction with Virginia Department of Transportation (VDoT) and the Department of Conservation and Recreation (DCR), will work to identify, evaluate and designate roads in the county that have important and unique scenic value and experiences, provide diverse landscape experiences, provide linkages and access, provide leisurely motoring experiences, and are regionally significant.

TRN 3.0 Mass Transit: Create a better mass transit system (rail, bus, trolley, carpool) that allows for mobility of all citizens. (18)

TRN 3.1 Existing Service: To maintain and enhance the existing Blacksburg Transit (BT) transit service in order to maximize safety and efficiency while minimizing environmental degradation.

TRN 3.1.1 Efficient Transit: Encourage BT to provide more efficient and well-planned service routes, with "safe" bus stops and "safe" access to those bus stops, including: 1) well-planned service routes to decrease time spent waiting for the bus; 2) lit and well marked bus stops; and 3) and sidewalks or walkways/ bikeways to access bus stops safely rather than walking on the shoulder of a busy road.

TRN 3.1.2 Transit Service Extension: Request that the Metropolitan Planning Organization (MPO) evaluate mass transit extensions as part of the 2030 long-range transportation plan including the extension of the Two Town Trolley service between Blacksburg and Christiansburg to include Radford. (19)

TRN 3.2 Future Service: Encourage the provision of a mass transit service in commercial areas and between jurisdictions (Blacksburg, Christiansburg, Radford) and between MSAs (Blacksburg and Roanoke) to alleviate congestion and decrease the number of personal car trips.

TRN 3.2.1 Micro-shuttle: Ask the Metropolitan Planning Organization (MPO) to evaluate micro-shuttle service to area businesses within the core shopping area. This study would evaluate cost, demand, efficiency, and transit route tie-ins. A shuttle service would simply be a small-localized loop within the core shopping area, whereas the transit relay would serve a larger area. Possible funding sources could be businesses that would have a shuttle stop in front of their store, the jurisdictions served by the commercial area, and Chamber of

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Cross References and Notes:
18. Park and Ride facilities for outlying areas and public awareness programs for carpooling are addressed in TRN 2.3.2 (pg. 222)
19. Public transit services provide transportation for lower income and disabled commuters to travel to work and to the commercial areas in the County, as suggested in HHS 2.3: Transportation (pg. 175).

Commerce. Ideally, the micro-shuttle would be operated by BT and would tie into existing bus routes.

TRN 3.2.2 Valley Metro Service: Establish clear benchmarks to measure the success or failure of Valley Metro's demonstration project for express bus service between Blacksburg and downtown Roanoke.

TRN 3.2.3 Alternate Transit Transfer Site: Encourage Blacksburg Transit and Virginia Tech to evaluate an alternative to the existing transit transfer area on campus at Burress Hall. While Burress Hall serves the Virginia Tech population well, it does not purposefully serve other users of the BT transit system. The idea is to make mass transit more usable by all citizens; therefore finding an additional off-campus transit transfer site would be very beneficial.

TRN 3.3: Villages and Public Transportation: Evaluate the provision of public transportation between the six villages (Belview, Elliston-Lafayette, Plum Creek, Prices Fork, Riner, and Shawsville) and the urban centers (Blacksburg, Christiansburg, and Radford).

TRN 4.0 Alternative Transportation: Support viable alternative modes of transportation (walking/ biking trails) and provide connectivity to existing transportation networks. Walking and biking trails are an important alternative mode of transportation that can reduce congestion from the use of private cars. By managing the existing trails network and providing connectivity to other modes of transportation, the County can develop a comprehensive transportation network that balances safety, mobility, cost, and environmental impact. When walkway and bikeways interconnect, people are more likely to use them to get to and from work, shopping, etc. The Huckleberry Trail, Mid-County Park Market Place Connection, and New River Trails are walkways/ bikeways that should be linked with other local and regional walkway/ bikeway systems. (20)

TRN 4.1 Commercial/ Public Use: Evaluate sidewalk and bike rack requirements for commercial and public use developments in order to encourage the use of alternative transportation and alleviate congestion.

TRN 4.2 Bikeways, Walkways, and Trails: Encourage coordination between the County, Blacksburg, Christiansburg, and regional jurisdictions in order to provide connectivity of all bikeways, walkways and Trails.

TRN 4.2.1 Bikeways, Walkways, and Trails Coordination: Use the Metropolitan Planning Organization (MPO) framework to create coordination committee to study the connectivity of the bikeway, walkway, sidewalk, and heritage trail network..

TRN 4.2.2 Walkway/ Bikeway Update: Work with the Metropolitan Planning Organization to review and update the Bikeway, Walkway, and Heritage Trails Plan.

Cross References and Notes:
20. The provision of pedestrian-oriented transportation facilities (bikeways, walkways, sidewalks, and Heritage Trails) are at the core of a number of different provisions in this plan. They are central to the establishment of safe neighborhoods (HSG 1.3.1, pg. 190); provide connectivity in rural communities (PLU 1.4.2[b], pg. 39), villages (PLU 1.7.3[a], 1.7.4[d], and 1.7.5[d], pgs. 44-45), village expansion areas (PLU 1.6.5[c] and1.6.5[c], pg.42) and urban expansion areas (PLU 1.8.4[c], pg. 46); are encouraged in new developments [PLU 2.1[f], pg. 48) and in neighborhood and community design (PLU 3.1.1[b][i-v], pg. 50), provide recreational opportunities (PRC1.3.2 and 2.3, pgs. 206-7), and provide additional commuting opportunities to the large scale economic and industrial areas (PRC 2.3.2, pg. 207).

TRN 5.0 Multi-Modal Transportation Goal. Encourage, maintain, and enhance air and rail transportation service in Montgomery County and the New River Valley. The New River Valley provides Virginia with a rich resource of educational institutions. With those institutions come high technology industries and businesses. Public transportation rail and air links between southwest Virginia, the State Capital, and Washington, D.C. are essential for the continued growth and prosperity of the New River Valley and would help spawn new economic growth in the more rural western sections of the state. New corporations and high tech industries would take a more favorable look at locating in Virginia with this type of statewide transportation initiative.

TRN 5.1 Air Transportation: Maintain and enhance the complementary roles of the three airports serving Montgomery County: 1) Virginia Tech / Montgomery Executive Airport for corporate and general aviation needs; 2 New River Valley Airport for air freight needs, and 3) Roanoke Regional Airport for full-service air passenger needs.

TRN 5.1.1 Low Cost Carrier Strategy: Support Virginia Tech's efforts to attract a low cost air carrier to the Roanoke Regional Airport.

TRN 5.2 Rail Transportation: Maintain and enhance Norfolk Southern rail service to businesses, industries, and people in Montgomery County.

TRN 5.2.1 Industrial Rail Spurs : Support increased rail service and spurs to the industrial areas and parks in the county. (21)

TRN 5.2.2 Interstate 81 Freight Diversion Strategy: Support state efforts to promote rail alternatives to through truck traffic on Interstate 81. This will necessitate consideration of rail improvements in nearby states in conjunction with improvements to "bottlenecks" in Virginia in order to provide competitive, long haul rail service.

TRN 5.2.3 Trans Dominion Express Strategy: Support state efforts to promote high speed passenger rail service for southwestern Virginia.

Cross References and Notes:
21. The Corning Rail Spur is one example.